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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,077	10/15/2001	Tohru Kimura	02860.0691	1552

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EXAMINER

THOMPSON, TIMOTHY J

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/976,077	Applicant(s) KIMURA ET AL.	
	Examiner Timothy J Thompson	Art Unit 2873	
	-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --		

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-18, 20-70, 73-202 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) ☒ Claim(s) 32-70 and 73-202 is/are allowed.

6) ☒ Claim(s) 1-3 is/are rejected.

7) ☒ Claim(s) 4-18 and 20-31 is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

 a) ☒ All b) ☐ Some * c) ☐ None of:

 1. ☒ Certified copies of the priority documents have been received.

 2. ☐ Certified copies of the priority documents have been received in Application No. ____.

 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 03/04.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: ____.

DETAILED ACTION

The after Final Amendment has been entered in to the application

Terminal Disclaimer

A terminal disclaimer was received on 11/20/2003. The terminal disclaimer pertaining to claims 93-98, 134, 141-146, 158-160, 163, 164 and claims 99-101 had not been approved at the time of the mailing of this office action, therefore the notice of allowance of these claims, as detailed below, and claims 99-101, 135-145, 147, 148, 161, 162, 165-167 which depend from these claims, are contingent upon the approval of the terminal disclaimer.

IDS

The nonpatent references listed on the IDS 1449 form, submitted on 03/22/2004, where not available to the examiner, it is uncertain as to if the references were not submitted or misplaced by the patent office. Would the attorney for the applicant please submit the nonpatent literature, listed on the 1449 form, with his response to this office action so that the examiner can consider these references.

Allowable Subject Matter

The notice of allowance of claims 4-18, 20-31 is withdrawn.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suganuma(U.S. Patent No. 5,880,893) in view of Sato et al. (U.S. Patent No. 5,181,141) and Kitagishi et al.(U.S. Patent No. 4,907,868).

Regarding claim 1, Suganuma discloses a first lens having a positive refractive power(fig 1, 1); and a second lens having a positive refractive power(fig 1, 2); wherein the first lens and the second lens are aligned in this order from a light source side of the objective lens(fig 1), and the objective lens has an $NA > 0.70$ (col 12, lines 65-68). Suganuma does not specifically disclose the first lens and the second lens are respectively made of a material having a specific gravity of 2.0 or less. However, Kitagishi et al. states that when using a movable lens it is preferable to use one with a low specific gravity so as to lighten the movable lens thus improving the responsiveness of the optical system(the 58 paragraph within the Detailed Description of the Invention), additionally, Sato et al discloses forming a lens made of a material having a specific gravity of 2.0 or less(col 1, lines 25-45). It would have been obvious to one skilled in the art at the time of the invention to form the lenses from a plastic material with a specific gravity of less than 2 as shown by Sato et al., in the optical system of Suganuma, since a shown by Sato et al., a plastic lens material with a specific gravity of less than 2

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is commonly used in optical systems so as to lighten the movable lens thus improving the responsiveness of the optical system.

Regarding claim 2, Suganuma discloses the $NA > .80$ (col 12, lines 65-68).

Regarding claim 3, Suganuma discloses the first lens and the second lens are made of a plastic (col 20, lines 24-30).

Allowable Subject Matter

Claims 4-18, 20-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With the allowable features being the aspheric surfaces, the conditional formula pertaining to; specific focal lengths; NA; X1; X3; radius of curvature of the objective lens.

Claims 32-70, 73-202 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art taken either singularity or in combination fails to anticipate or fairly suggest the limitations of the independent claim, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 32, 56, 67-70, 73, 93, 102, 134, 146, 149, 158, 168, 184-188 with the important features being the conditional formula pertaining to; specific focal lengths; NA; WD; X1; X3; ENP; PD; PT; CA; SA; radius of curvature of the objective lens;

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excessive axial chromatic aberration correction such that a focal length is made longer; the coupling lens is moved along an optical axis direction such that a variation of the spherical aberration generated at each optical surface of the light converging optical system is corrected; the specific gravity of 2.0 or less.

Therefore claims 32-70, 73-202 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (571) 272-2342. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (571) 272-2328.

T.J.T.

5/5/04


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